622. Outcomes of bilateral sacrospinous ligament fixation with mesh for the treatment of apical pelvic organ prolapse

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Introduction

The aim of the study was to evaluate the applicability of **bilateral sacrospinous ligament fixation with the mesh (BSC)** in daily clinical practice.
The surgery was performed in women with baseline **stage ≥3 prolapse and stage ≥2 apical prolapse** according to the Pelvic Organ Prolapse Quantification (POP-Q). The **objective** and **subjective effects** of the surgery were assessed.

Methods and Materials

- Prospective observational study **–** in **64 women** with symptomatic apical compartment defect scheduled for the surgery.
- The **bilateral sacrospinous ligament fixation with mesh implant combined with native tissue repair (anterior and/or posterior colporrhaphy)** was performed.
- Medical history was taken, urogynecological examination was performed with the POP-Q assessment.
- Patient-reported outcomes were assessed:
  - Incontinence Severity Index (**ISI**),
  - Pelvic Floor Distress Inventory (**PFDI-20**),
  - Pelvic Floor Impact Questionnaire (**PFIQ-7**),
  - Epidemiology of Prolapse and Incontinence Questionnaire (**EPIQ**) **(#35**) prolapse question.
- Follow-up at **6 months postoperatively**
- POP-Q assessment was repeated at the follow-up visit, and patients were asked to complete the questionnaires
Baseline and post-treatment data were compared.
- **Anatomical outcomes – POP-Q staging**
  - defined as POP-Q stage ≤1 for all anatomical landmarks
- **Functional outcomes – self-reported by patients**

McNemar's test was used to compare the change in distribution of categorical variables between baseline and the follow-up. Whenever the change in mean distribution was under scrutiny, a paired t-test was applied.

Table 1. Characteristics of the study population

Variable	BSC (n=64)
Age (years), mean ± SD	68.63 ± 6.06
BMI (kg/m^2), mean ± SD	27.27 ± 3.29
Postmenopausal n (%)	63 (98.4%)
Education level n (%)	
Primary	4 (6.25%)
Secondary	43 (67.2%)
Higher	17 (26.6%)
Parity, mean ± SD (median)	2.27 ± 1.0 (2)
Vaginal delivery	60 (93.75%)
Cesarean delivery	0
Both	3 (4.7%)
Previous surgical history	
Hysterectomy	6 (9.4%)
Supracervical hysterectomy	3 (4.7%)
Prior prolapse surgery	25 (39.1%)
Prior anti-UI surgery	4 (6.25%)
Operative time (min)	106.14 ± 24.2 median 106 [58; 170]
Pre-operative hemoglobin (g/dl)	13.74 ± 0.81
Post-operative hemoglobin (g/dl)	12.07 ± 0.72
Concurrent procedures	
Anterior colporrhaphy	46 (71.9%)
Posterior colporrhaphy	42 (65.6%)
Transobturator tape	2 (3.1%)
Complications according to Clavien-Dindo classification	
None	44 (68.8%)
I	16 (25.0%)
II	4 (6.3%)
III, IV, V	-

Data are presented as mean ± SD, median [range] or number (%)
a McNemar test, b paired t-test

Results

- **64 patients with POP-Q ≥ stage 3 were included.** Patients had a mean age of 68.63±6.06 years and BMI of 27.27±3.29 kg/m^2. The mean operative time was 106.14±24.2 min, and change in hemoglobin was -1.89±0.82 g/dl (p<0.001).
- Complications according to the C-D classification were reported in 16(25.0%) patients grade I, and in 4(6.3%) patients grade II.
- No complications were reported in 44(68.8%) patients.

The effect of surgery was assessed in 57(89.1%) women who presented at the follow up visit.

- According to the anatomical definition of success: 33 (57.9%) patients were completely recurrence free and only 1 (1.75%) patient had apical recurrence (POP-Q stage 2). Most recurrences were asymptomatic cystoceles 11 (19.3%) POP-Q stage 2, and one (1.75%) symptomatic cystocoele POP-Q stage 3.
- The mean PFDI-20 and PFIQ-7 scores in all subscales and the total scores (156.81±73.58 vs 51.20±44.19 and 113.72±72.63 vs 28.65±40.60, respectively) significantly improved 6 months after surgery (p<0.000).
- Median POP-Q stages in all landmarks improved significantly from the pre- to the postoperative visit (p<0.0002) (Table 2). Median EPIQ #35 changed from 10 to 0 (p=0.000) and ISI was not statistically different after surgery (p=0.625).

Table 2. Anatomical and subjective outcomes at baseline and 6 months after treatment in the study group

Variable	Pre-operative (n=64)	Post-operative (n=57)	p
POP-Q stage			**<0.0002[a]**
0	-	19 (39.1%)	
I	-	14 (21.7%)	
II	-	24 (34.8%)	
III	46 (71.9%)	1 (4.4%)	
IV	18 (28.1%)	-	
Point Aa	1.50 ± 2.15 3 [–3; 3]	–2.1 ± 1.21 –3 [–3; 3]	**0.000[b]**
Point Ba	4.65 ± 4.36 5 [–3; 15]	–2.33 ± 1.33 –3 [–3; 5]	**0.000[b]**
Point C	6.17 ± 4.17 5 [0; 15]	–8.25 ± 1.75 –8 [–12; –1]	**0.000[b]**
Point Ap	–0.91 ± 2.09 –2 [–3; 3]	–2.74 ± 0.58 –3 [–3; –1]	**0.000[b]**
Point Bp	2.02 ±5.46 –1 [-2; 15]	–2.66 ± 0.72 –3 [–3; 0]	**0.000[b]**
Incontinence Severity Index (ISI)	2.03 ± 2.29 1 [0; 8]	1.63 ± 1.86 1 [0; 8]	0.625[b]
EPIQ #35	8.60 ± 1.95 10 [2;10]	0.17 ± 1.02 0 [0;7]	**0.000[b]**
PFIQ-7			
UIQ-7	43.64 ± 32.45	14.06 ± 22.91	**0.000[b]**
CRAIQ-7	17.37 ± 27.92	7.34 ± 15.56	**0.011[b]**
POPIQ-7	52.71 ± 26.78	7.24 ± 16.62	**0.000[b]**
Total Score	113.72 ± 72.63	28.65 ± 40.60	**0.000[b]**
PFDI-20			
POPDI-6	62.96 ± 24.16	9.06 ± 12.05	**0.000[b]**
CRADI-8	40.48 ± 32.68	20.65 ± 20.73	**0.000[b]**
UDI-6	53.37 ± 28.50	20.83 ± 22.37	**0.000[b]**
Total Score	156.81 ± 73.58	51.20 ± 44.19	**0.000[b]**

Conclusions

Pelvic organ prolapse stage ≥3 with apical compartment prolapse stage ≥2 **can be successfully treated** with apical mesh surgery combined with native tissue repair in the anterior and/or posterior compartment.
The **subjective assessment** of the surgery results revealed **significant improvement**.

- Vaginal bulge symptoms reduced from 8.60±1.95 to 0.17±1.02 postoperatively (p=0.000), with no deterioration in urinary continence (p=0.625).
- The procedure was not connected with any serious adverse events according to the Clavien-Dindo classification.

Concluding message – Apical mesh support combined with the native tissue repair resulted in successful anatomical and functional outcomes after 6 months of follow-up.
We found **98.25% apical compartment success rate**, and **significant improvement in PFDI-20 and PFIQ-7 prolapse, colorectal, and urinary subscales** with no deterioration in the Incontinence Severity Index.